

Name: _____

A2&T: Mixed Review

In addition to the questions below, please review all class notes and homework assignments.

1) Simplify: $\frac{\sqrt{48}}{\sqrt{3}}$

A) $\frac{4\sqrt{3}}{3}$

B) 16

C) 8

D) 4

2) Simplify: $\frac{\sqrt[3]{25}}{\sqrt[3]{16}}$

A) $\frac{\sqrt[3]{25}}{4}$

B) $\frac{\sqrt{100}}{4}$

C) $\frac{\sqrt[3]{100}}{4}$

D) $\frac{5}{4}$

3) Simplify: $\sqrt[3]{24x^8}$

Questions 4 and 5 refer to the following:

Simplify the given expression. [Assume all variables represent positive real numbers.]

4) $\sqrt[3]{\frac{81x^7}{z^3}}$

5) $\sqrt[3]{54x^7y^{19}}$

6) Simplify: $\frac{\sqrt[3]{1}}{\sqrt[3]{4}}$

- 7) Simplify: $6\sqrt{8} + 2\sqrt{18}$
A) $12\sqrt{6}$ B) $16\sqrt{3}$ C) $8\sqrt{24}$ D) $18\sqrt{2}$
- 8) Simplify: $\sqrt{8x^3} + \sqrt{50x^5} - \sqrt{18x^3} - \sqrt{32x^5}$
A) $x^2\sqrt{2x} - x\sqrt{2x}$ C) $-x\sqrt{2} + x\sqrt{2x}$
B) $5x\sqrt{2x} - 9x^2\sqrt{x^3}$ D) $x\sqrt{2x} + x^2\sqrt{2x}$
- 9) Simplify: $(2\sqrt{3} - 3\sqrt{2})^2$
A) $-6 - 12\sqrt{6}$ B) $30 - 12\sqrt{6}$ C) -6 D) $-6 - 6\sqrt{6}$
- 10) Expand and simplify: $(4\sqrt{2} + 3\sqrt{5})(4\sqrt{2} - 3\sqrt{5})$
A) -7 B) 13 C) -13 D) -161
- 11) If $(\sqrt{18} + \sqrt{2})$ is divided by $\sqrt{2}$, the result is
A) 4 B) 3 C) $\sqrt{10}$ D) 16
- 12) Simplify: $\sqrt[3]{8x^2} \cdot \sqrt[3]{3x^4}$
- 13) Simplify: $\sqrt{3}(\sqrt{3} - 2\sqrt{5})$
- 14) Simplify: $(2\sqrt{y} - 3)(\sqrt{y} + 2)$
- 15) Simplify: $\frac{3}{\sqrt{5}}$

16) Simplify: $\frac{\sqrt{27} + 2\sqrt{12}}{\sqrt{3}}$

17) Simplify: $\frac{\sqrt{3} + 1}{\sqrt{3} - 1}$

A) 2

B) -1

C) $5 + \sqrt{3}$

D) $2 + \sqrt{3}$

18) Simplify: $\frac{4\sqrt{7} + 3\sqrt{2}}{5\sqrt{2} + 2\sqrt{7}}$

A) $-\frac{13 + 7\sqrt{14}}{11}$

B) $\frac{13 - 7\sqrt{14}}{11}$

C) $\frac{-13 + 7\sqrt{14}}{11}$

D) $\frac{13 + 7\sqrt{14}}{11}$

19) The expression $(-3x^2y^3)^3$ is equivalent to

A) $-3x^5y^6$

B) $-9x^6y^9$

C) $-27x^5y^6$

D) $-27x^6y^9$

20) The product of $2x^3$ and $3x^2$ is

A) $5x^6$

B) $6x^5$

C) $5x^5$

D) $6x^6$

21) The product of $(5ab)$ and $(-2a^2b)^3$ is

A) $-40a^7b^4$

B) $-40a^6b^4$

C) $-30a^7b^4$

D) $-30a^6b^4$

22) Simplify: $\frac{3^{x+2}}{3^x}$

A) -9

B) 9

C) $\frac{1}{9}$

D) $-\frac{1}{9}$

23) Simplify: $3x^0$

24) Simplify and express with positive exponents: $(2b^{-3})^{-2}$

25) Simplify: $(x^n)^3(-5x^n)^2$

26) Simplify: $y^5 \cdot y^0$

27) Simplify and express with positive exponents: $\frac{6a^{-3}b^2}{3ab^{-2}}$

28) Simplify and express with positive exponents: $(\frac{-2ab}{3a^{-2}b^2})^3$

29) Simplify and express with positive exponents: $(\frac{-2x^{-2}z^3}{w^{-2}})^{-2}$

30) Find the value of $(\frac{8}{27})^{-\frac{2}{3}}$.

A) $-\frac{4}{9}$

B) $\frac{4}{9}$

C) $\frac{9}{4}$

D) $-\frac{2}{3}$

31) When simplified, the expression $(\sqrt[3]{m^4})\left(m^{-\frac{1}{2}}\right)$ is equivalent to

A) $\sqrt[5]{m^6}$

B) $\sqrt[5]{m^{-4}}$

C) $\sqrt[4]{m^3}$

D) $\sqrt{m^5}$

32) Express with rational exponents: $\sqrt[3]{x^2y^4}$

33) Express in radical form: $(rs)^{\frac{3}{4}}$

34) Simplify: $(-27)^{\frac{2}{3}}$

35) Simplify: $4^0 - 8^{\frac{2}{3}} + 9^{\frac{1}{2}}$

36) Rewrite the given radical expression using only positive exponents. [Assume all variables have a positive value.]

$$\sqrt[3]{8a^4b^5}$$